

**Defense Information Infrastructure (DII)
Common Operating Environment (COE)**

Version 3.0/B

**Version Description Document for the Developers Toolkit
(AIX 4.1.4)**

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NOTE: Courier font is used to indicate entries to be typed at the keyboard, UNIX commands, file and directory names, and screen text. For example:

The file is located in the `DII_DEV` directory.

1. System Overview

Defense Information Infrastructure (DII) Common Operating Environment (COE) developer's tools to aid the developer in the creation and ultimate installation of DII COE segments. The tools make software integration a largely automated process, thus significantly reducing development time while automatically allowing detection of potential integration and runtime problem areas.

This delivery consists of (1) 10 developer tools (`CalcSpace`, `CanInstall`, `ConvertSeg`, `MakeAttribs`, `MakeInstall`, `TestInstall`, `TestRemove`, `TimeStamp`, `VerifySeg`, and `VerUpdate`); (2) a setup script called `MakeTOOLSEnv`; (3) a data file called `TapeSizes` that contains a list of known tape devices; and (4) an Application Programmer Interface (API) `examples` directory and `includes` and `libs` directories. The developer's toolkit is delivered separate from the DII COE Kernel tape. By default, this product is located under the `DII_DEV` directory. The actual location of the developer's toolkit may vary from system to system because it is installed via a `tar` command. For example, if the toolkit is tarred to `/h`, the path would be `/h/DII_DEV`.

Developer's Tools

The 10 developer's tools can be run from the command line, and some can be run from other code using published APIs. The following developer's tools are included in the DII COE Version 3.0/B delivery:

C `CalcSpace` (Version 1.0.0.4) Cthe `CalcSpace` tool computes the space required for the segment specified and updates the hardware descriptor.

C `CanInstall` (Version 1.0.0.6) Cthe `CanInstall` tool tests a segment to see if it can be installed, which means that all required segments must already be on the disk and the disk cannot have any conflicting segments.

C `ConvertSeg` (Version 1.0.0.7) Cthe `ConvertSeg` tool examines segment descriptors and converts them to the latest format.

C `MakeAttribs` (Version 1.0.0.7) Cthe `MakeAttribs` tool creates the descriptor file `FileAttribs`, which recursively traverses every subdirectory beneath the segment home directory and creates a file with lines in the proper format.

C `MakeInstall` (Version 1.0.1.5) Cthe `MakeInstall` tool writes one or more segments to an installation medium or packages the segments for distribution over the network.

- C TestInstall** (Version 1.0.0.7) **C**the TestInstall tool temporarily installs a segment that already resides on disk.
- C TestRemove** (Version 1.0.0.6) **C**the TestRemove tool removes a segment that was installed by TestInstall.
- C TimeStamp** (Version 1.0.0.6) **C**the TimeStamp tool puts the current time and date into the `VERSION` descriptor of the specified segment.
- C VerifySeg** (Version 1.0.0.7) **C**the VerifySeg tool validates that a segment conforms to the rules for defining a segment.
- C VerUpdate** (Version 1.0.1.5) **C**the VerUpdate tool increments the segment version number and updates the date and time in the `VERSION` descriptor of the specified segment.

The *DII COE Integration and Runtime Specification* provides a description of these tools and their functionality. The *DII COE Programming Guide* also provides examples of how to use some of these tools.

MakeTOOLSEnv Setup Script

The `MakeTOOLSEnv` setup script is located in the `DII_DEV/Scripts` directory. It defines the environment variables required for developer's tools processing. This script should be sourced before running the developer's tools.

TapeSizes Data File

The `TapeSizes` data file is located in the `DII_DEV/data` directory. It contains a list of known tape devices. This file is used as a convenience feature with the `MakeInstall` tool.

NOTE: The environment variable `TOOLS_DATA` must be set and pointing to `DII_DEV/data` to allow `MakeInstall` to access this file.

examples Directory

The `examples` directory contains a list of example C programming files, which show developers how to use the public APIs. The required public `include` files are also shown. Examples are located in the `DII_DEV/examples` directory.

includes Directory

Public `include` files are used to compile with the public APIs. Public `include` files are located in the `DII_DEV/includes` directory.

libs Directory

Public API libraries are located in the `DII_DEV/libs` directory.

2. Referenced Documents

The following documents are referenced in this Version Description Document:

C *Defense Information Infrastructure (DII) Common Operating Environment (COE) Integration and Runtime Specification* Version 2.0, DII COE I&RTS:Rev 2.0, Inter-National Research Institute, October 23, 1995

C *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Application Programmer Interface (API) Reference Guide (Digital UNIX and AIX)*, DII.30B.DECIBM.RG-1, Inter-National Research Institute, February 19, 1997

C *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Programming Guide (Digital UNIX and AIX)*, DII.30B.DECIBM.PG-1, Inter-National Research Institute, February 19, 1997.

3. Version Description

3.1 Inventory of Materials Released

- C Magnetic media: Two 8mm tapes consisting of a relative tar of the Developer's Toolkit, Version 3.0/B (AIX 4.1.4).
- C Soft-copy Documentation: One 3.5" floppy diskette (WordPerfect 6.0 for Windows format) containing the *Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0/B Version Description Document for the Developer's Toolkit (AIX 4.1.4)*, Document Control No. DII.30B.IBM414.DTK.VDD-1, February 19, 1997.
- C Hard-copy Documentation: Two hard copies of the aforementioned Version Description Document.

3.2 Software Changes

This delivery contains no software changes.

4. Installation Instructions

Reference the *DII COE Programming Guide (Digital UNIX and AIX)* for instructions on installing the developer's tools.

5. Known Problems and Errors

Reference the following table for a list of known problems and errors with the DII COE Version 3.0/B Developer's Toolkit (AIX 4.1.4).

DII COE Version 3.0/B Developer's Toolkit (AIX 4.1.4) Known Problems and Errors	
Total Open Known Problems and Errors: [1]	
INRI Number:	RTO00001445
Agency Number:	None.
Short Description:	The "Warnings" from MakeAttribs do not differentiate between files and directories.
Long Description:	The "Warnings" displayed as a result of running MakeAttribs do not differentiate between files and directories. Both files and directories appear as "Files" in the corresponding "Please inspect the File" message.

6. Release Notes

General

1. The user must log in as `root` to install the Developer's Toolkit tape. By doing this, the user will ensure that the tools have the correct permissions and ownerships to simplify use.
2. The tools do not support the `?` command line parameter for help. Help can be displayed for all tools by using the `-h` or `-H` command line parameters.
3. If the add, append, or delete keywords are used in the community `SegDescrip` entry, the brackets "`{ }`" that mark the beginning and end of the text must be the first characters on a new line.
4. The `MakeTOOLSEnv` script must be run in the `DII_DEV/Scripts` directory to set the `TOOLS_HOME`, `MACHINE`, `MACHINE_OS`, and `CPU` environment variables. This script should be run before running any of the developer's tools. If this script is not run, errors may occur.

MakeInstall Tool

1. MakeInstall supports multi-volume tapes but will not divide segments across tapes.
2. MakeInstall does not support variants.
3. MakeInstall does not allow segments and their descriptors to be checked out from the repository.
4. MakeInstall does not support the `-ot {files}` command line option.
5. The `TOOLS_DATA` environment variable must be set to the developer's tools data directory in order to display the device table.
6. In order to not compress a segment, the `$NOCOMPRESS` option must be specified in the direct `SegDescrip` entry in the `SegInfo` file. MakeInstall no longer prompts the user with a compress option; instead, the tool automatically references the `SegDescrip` entry.

TestInstall Tool

1. The `AcctGrp` descriptor only supports one entry. If multiple entries exist, only the first account group is created.
2. The `Hardware` descriptor does not support "PC" or "Pentium" in the `$CPU` field and does not support "NT" or "SCO" in the `$OPSYS` field. These keywords are supported but are invalid on UNIX platforms.
3. Network Information Service (NIS) and Domain Name Service (DNS) servers are not updated when processing the `Network` descriptor.
4. The `$NETMASK` keyword in the `Network` descriptor is not processed.
5. The `$HOME_DIR` keyword in the `Requires` descriptor is not processed.

TestRemove Tool

1. TestRemove does not remove services, groups, or password file entries and does not perform an unmount.

TimeStamp Tool

1. If a valid version line in the version file cannot be identified and no command line parameters are given, the TimeStamp tool will return an error.

VerifySeg Tool

1. VerifySeg does not check the syntax of version numbers listed in the `Compat Segment Descriptor` file.
2. VerifySeg performs keyword parsing (searches for keywords and their associated fields) but does not perform validity (bounds or data field) checking in the `Conflicts` or `VERSION` descriptor file.
3. VerifySeg does not perform checking in the `FilesList` Segment Descriptor file.
4. VerifySeg performs validity checking (bounds or data field) on keywords but not on data associated with keywords (e.g., disk size in the `Hardware Segment Descriptor` file).
5. VerifySeg does not check keyword combination or keyword and segment type constraints in the `Hardware Segment Descriptor` file.

VerUpdate Tool

1. If a valid version line in the version file cannot be identified and no command line parameters are given, the VerUpdate tool will return an error.

Public APIs

Reference the *DII COE API Reference Guide (Digital UNIX and AIX)* and the *DII COE Programming Guide (Digital UNIX and AIX)* for information on public APIs.